

REMARKS

I. Introduction

Claims 1—23 are pending in the present application. In an August 1, 2003, Office Action (herein "Office Action"), the drawings and specification were objected to for various reasons. Applicants have amended the specification and submit substitute FIGURE 5 as required by the objection. Applicants respectfully assert that all the amendments to the specification and drawing figure have in no way introduced new matter to the present application and only incorporate various typographical, inadvertent errors in the present application. In light of the amendments to the specification and drawing figure, applicants respectfully request a withdrawal of the Office Action's objections.

Claims 1-4, 7-13, and 14-23 were rejected under 35 U.S.C. 102(e) as unpatentable over U.S. Patent No. 6,476,828 to Burkett et al. (herein "Burkett"). Claims 5 and 6 were rejected under 35 U.S.C. 103(a) as unpatentable over Burkett in view of U.S. Patent No. 6,442,576 to Edelman et al. (herein "Edelman"). For the following reasons, applicants respectfully submit that the rejected claims of the present application are not anticipated or obvious over the cited and applied references, alone or in combination, because they fail to teach or suggest the association of directional properties to display object hierarchies as recited in the claims. Prior to discussing more detailed reasons why applicants believe that all the claims of the present invention are allowable, a brief description of the present invention and the cited references are presented.

A. Summary of the Present Invention

The present invention is directed to a system and method for user interface mirroring. To enable user interface mirroring, user interface objects are defined according to an object hierarchy. The object hierarchy defines a logical relationship between a root display element and

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one or more child display elements. In accordance with the present invention, a root element includes a directional property that defines a directional property for the root element and how the element should be rendered on a display. In turn, the directional property of the root element can be inherited by each of the child elements.

To process the object hierarchy information, a layout manager obtains the logical relationship and the specified directional properties for the root and child elements. The layout manager then correlates a set of physical coordinates for each display object that accounts for the directional property of each element, while maintaining the logical relationship between the elements. A renderer renders each of the display objects according to the specified physical coordinates and directional properties. Additionally, the renderer can maintain a truth table that allows for a comparison of a directional property of an object hierarchy to specific requirements of a display element.

Numerous advantages may be realized by the system or method recited in the claims of the present application. In one aspect, a single user interface object hierarchy can be generated in any direction by the association of directional properties to the display objects. In another aspect, user interface display objects can be dynamically modified to accommodate for language reading direction without requiring a separate display object hierarchy for each language reading direction. In a further aspect, individual display elements can preserve individual display element directional properties independent of the directional properties of the other elements in a display object hierarchy. Additional advantages may also be realized within the present invention.

B. U.S. Patent No. 6,476,828 to Burkett

Burkett is purportedly directed toward a system and method for building and displaying dynamic graphical user interfaces that can be updated without requiring code-level modification

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and recompilation. Burkett teaches the mapping of XML data groups to XML display layout attributes. The data within the XML data group is arranged hierarchically in accordance with conventional XML teachings. (Col. 4, lines 14-21). Each piece of data within the data group is defined by an XML tag. In accordance with the teachings of Burkett, XML display layouts are created that define layout areas with the requirements/limitations of a particular display. Each layout area is also defined by XML tags. Accordingly, Burkett teaches the association of display layout area information to display group data by matching XML tags from the XML data group to XML tags from the XML data layout. (Col. 8, lines 1-67).

Burkett fails to teach or suggest the association of a directional property for a display object hierarchy. Burkett also fails to teach or suggest the generation of physical coordinates for a display screen incorporating both a logical relationship and a directional property for the display object hierarchy elements.

C. U.S. Patent No. 6,442,576 to Edelman

Edelman is purportedly directed toward an apparatus and method to perform search operations on documents having nested elements. Generally described, Edelman teaches various functions related to finding elements (search function) within a document and replacing those elements (replace function). Additionally, Edelman teaches the ability to utilize the search and replace functions within embedded elements in the document.

Edelman fails to teach or suggest the association of a directional property for a display object hierarchy. Edelman also fails to teach or suggest the generation of physical coordinates for a display screen incorporating both a logical relationship and a directional property for the display object hierarchy elements.

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II. The Claims Distinguished

A. Claims 1-4 and 7-13

In its entirety, Claim 1 reads as follows:

1. A method for processing a directional property in a display object the method comprising:

obtaining an object hierarchy having a root element and one or more child elements, wherein the object hierarchy defines a logical relationship between each object hierarchy element;

associating a directional property for the object hierarchy;

generating a set of physical coordinates corresponding to a display screen for each element in the object hierarchy, wherein the physical coordinates correspond to the logical relationship between the object hierarchy elements and the directional property associated with the object hierarchy.

Claim 1 recites "associating a directional property for the object hierarchy" and "generating a set of physical coordinates corresponding to a display screen for each element in the object hierarchy, wherein the physical coordinates correspond to the logical relationship between the object hierarchy elements and the directional property associated with the object hierarchy." As described above, the association of a directional property to an object hierarchy and the generation of physical coordinates incorporating the directional property facilitate the rendering of the display object hierarchy in multiple directions.

The Office Action asserts that Burkett teaches the generation of an object hierarchy including a root element and one or more child elements defining a logical relationship between the elements. The Office Action further asserts that Burkett teaches the association of a directional property for the display object hierarchy and the generation of the physical coordinates for each element in the object hierarchy incorporating a logical relationship between the object hierarchy elements and the directional property. For the following reasons, applicants respectfully suggest that Burkett fails to teach the association of a directional property to an

object hierarchy. Accordingly, Burkett would necessarily fail to teach the incorporation of the directional property in the generation of physical coordinates for each display object element.

In contrast to the limitations recited in Claim 1, Burkett clearly is limited to teaching the association of a limited subset of display information to data from an XML data group. The limited subset of information, however, does not include any type of directional property with the XML data group and/or the XML display layout. As illustrated in various drawing figures of Burkett, the layout information corresponds solely with textual alignment information, physical coordinate information and/or other traditional non-directional rendering information. None of the display information in any way defines a directional property for any element with the data group. Applicants note that every example included and illustrated in Burkett corresponds to a single direction, namely, a left to right language reading direction.

The Office Action cites a specific section of Burkett as teaching associating a directional property to the display object hierarchy. Applicants have reviewed the cited portion and respectfully assert that the cited sections of Burkett relate solely to define display format information for a display layout. The cited section, along with the entire Burkett reference, however, is silent as to directional properties for the elements and how direction could possibly be utilized in rendering displays. Accordingly, Burkett clearly does not teach and is not directed in any manner to the association of directional properties to display objects.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As described above, Burkett fails expressly to teach the association of a directional property to an object hierarchy as recited in Claim 1. Because it does not teach the association of a directional property to an object hierarchy, Burkett could not teach "generating a set of physical coordinates

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corresponding to a display screen for each element in the object hierarchy, wherein the physical coordinates correspond to the logical relationship between the object hierarchy elements and the directional property associated with the object hierarchy" as further recited in Claim 1. Accordingly, applicants respectfully request a withdrawal of the 35 U.S.C. § 102(e) rejection of Claim 1.

Claims 2-4 and 7-13 are dependent on Claim 1. As discussed above, Burkett fails to teach or suggest all of the limitations recited with regard to Claim 1. Accordingly, applicants respectfully request a withdrawal of the 35 U.S.C. § 102(e) rejection of Claims 2-4 and 7-13 for the same reasons as discussed above with regard to Claim 1. In addition, applicants respectfully submit that Claims 2-4 and 7-13 recite additional limitations related to the directional property that further establish the patentability of applicants' invention over Burkett. Examples include, but are not limited to, the association of a root element directional property to child elements and the maintenance of a truth table to preserve directional properties of specific child elements. Because Burkett does not teach the association of any directional properties, it would necessarily fail to teach the additional limitations found in dependent Claims 2-4 and 7-13.

B. Claims 14-17

In a manner similar to independent Claim 1, independent Claim 14 recites a "layout component operable to generate a set of physical coordinates for the object hierarchy corresponding to the logical relationship and a directional property for the object hierarchy." As discussed above with respect to independent Claim 1, Burkett clearly fails to teach associating a directional property to an object hierarchy. Accordingly, it would necessarily fail to teach or suggest a layout manager that generates physical coordinates for an object hierarchy that corresponds to a directional property of the object hierarchy as recited in Claim 14. In contrast, Burkett is limited to teaching non-directional layout information including textual alignment

information, physical coordinate information and/or other traditional non-directional rendering information. Because the cited reference fails to teach each and every element recited in Claim 14, applicants respectfully request withdrawal of the § 102(e) rejection with regard to Claim 14.

Claims 15-17 are dependent on Claim 14. As discussed above, Burkett fails to teach or suggest all of the limitations recited with regard to Claim 14. Accordingly, applicants respectfully request a withdrawal of the 35 U.S.C. § 102(e) rejection of Claims 15-17 for the same reasons as discussed above with regard to Claim 14. In addition, applicants respectfully submit that Claims 15-17 recite additional limitations related to the directional property that further establish the patentability of applicants' invention over Burkett, such as the maintenance of a truth table to preserve directional properties of specific child elements. Because Burkett does not teach the association of any directional properties, it would necessarily fail to teach the additional limitations found in dependent Claims 15-17.

B. Claims 18-23

In its entirety, Claim 18 reads as follows:

18. A method for processing a direction property in a display object, the method comprising:

obtaining a display object including a graphical resource, wherein the display object includes rendering information to determine whether the graphical resource can be maintained in a specific direction;

obtaining a specified directional property specified for the display object;

determining whether the display object can be rendered according to the specified directional property.

As discussed above with respect to independent Claim 1, Burkett clearly fails to teach obtaining a directional property for a specified display object as recited in Claim 18. Accordingly, it would necessarily fail to teach or suggest determining whether the display object can be rendered in accordance with the specified directional property as further recited in

Claim 18. In contrast, Burkett is limited to teaching non-directional layout information including textual alignment information, physical coordinate information and/or other traditional non-directional rendering information. Because the cited reference fails to teach each and every element recited in Claim 18, applicants respectfully request withdrawal of the § 102(e) rejection with regard to Claim 18.

Claims 19-23 are dependent on Claim 18. As discussed above, Burkett fails to teach or suggest all of the limitations recited with regard to Claim 18. Accordingly, applicants respectfully request a withdrawal of the 35 U.S.C. § 102(e) rejection of Claims 19-23 for the same reasons as discussed above with regard to Claim 18. In addition, applicants respectfully submit that Claims 19-23 recite additional limitations related to the directional property that further establish the patentability of applicants' invention over Burkett, such as the comparison of a truth table to determine whether a display object can be rendered in accordance with a directional property. Because Burkett does not teach the association of any directional properties, it would necessarily fail to teach the additional limitations found in dependent Claims 19-23.

E. Claims 5 and 6

Claims 5 and 6 are dependent on Claim 1. As discussed above, Burkett fails to teach or suggest all of the limitations recited with regard to Claim 1. Accordingly, for the above-mentioned reasons, Claims 5 and 6 are allowable over Burkett. In addition, Claims 5 and 6 further add to the nonobviousness of applicants' invention the association of a language reading direction as the directional property.

Applicants agree with the Office Action that Burkett fails to teach or suggest a directional property in the form of a language reading direction as recited in Claims 5 and 6. As described above, Burkett is silent as to any directional properties, including language reading direction.

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Further, applicants respectfully submit that Edelman does not teach or suggest associating directional properties to display object hierarchies. Accordingly, Edelman would necessarily fail to teach or suggest associating a language reading direction as a directional property. In contrast, Edelman is directed toward a system for utilizing various find and replace functions for HTML documents that can include embedded display elements. The cited portion of Edelman relied upon in the Office Action corresponds solely to the implementation of the various find and replace functions recursively to account for the embedded functions. Clearly, Edelman does not teach directional properties or language reading direction as a directional property.

Generally described, under 35 U.S.C. § 103(a), a *prima facie* case of obviousness can be established only if the cited references, alone or in combination, teach each and every element recited in the claim. *In re Bell*, 991 F.2d 781 (Fed. Cir. 1993). Burkett and Edelman, alone or in combination, fail to associate a directional property with an object hierarchy. Accordingly, the cited references, alone or in combination, would necessarily fail to teach or suggest that language reading direction would be the associated reading direction as further recited in Claims 5 and 6. Accordingly, applicants respectfully request withdrawal of the § 103 rejection of Claims 6 and 6.

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III. Conclusion

Based on the above-referenced arguments, applicants respectfully submit that all the claims of the present application, Claims 1-23, are allowable over the cited and applied references. Because the cited and applied references fail to teach or suggest associating a directional property with an object hierarchy, applicants respectfully request withdrawal of all the rejections of the claims of the present invention and allowance of the present application.

Respectfully submitted,

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